

U.S. Patent Application of Yamane et al.

Serial No.: 09/604,896 - Art Unit: 2857

**IN THE CLAIMS:**

Kindly amend the claims as follows:

Amend claims 1, 2, 3, 4, 6, 7, and 8.

Claim 5 was canceled without prejudice in an earlier Preliminary Amendment in 09/604,896.

Claim 9

A complete listing of the claims is provided. Please see the Remarks section for further discussion on this matter.

1. (2x amended) A pseudo noise generator comprising:

a first arbitrary random number generator for generating two groups of first random number signals respectively corresponding to pre-divided Amplitude Probability Distributions, which are obtained by pre-dividing a specified Amplitude Probability Distribution into two parts at a specified level;

a second arbitrary random number generator for generating two groups of second random number signals respectively defined by a specified Pulse Duration Distribution and a specified Pulse Spacing Distribution at said specified level;

control means for selecting [one] alternately one group or the other group of said two groups of first random number signals by the use of a memory selection signal obtained in accordance with said specified Pulse Duration Distribution and said specified Pulse Spacing Distribution defined at said specified level to obtain selected signals; and

a D/A converter for converting the selected signals to pseudo continuous noise of analog value; said pseudo continuous noise being generated in accordance with said Amplitude Probability Distribution, and said specified Pulse Duration Distribution and said specified Pulse Spacing Distribution at said specified level.

U.S. Patent Application of Yamane et al:

Serial No.: 09/604,896 - Art Unit: 2857

2. (2x amended) A pseudo noise generator comprising:

first terminal means receiving first clock pulses;

a controller for generating, in addition to a memory selection signal, second clock pulses counted down by one forth from said first clock pulses;

a first arbitrary random number generator for generating, under control with said first clock pulses and said memory selection signal, two groups of first random number signals respectively corresponding to pre-divided Amplitude Probability Distributions, which are obtained by pre-dividing a specified Amplitude Probability Distribution into two parts at a specified level;

a second arbitrary random number generator for generating, under control of said second clock pulses and said memory selection signal, two groups of second random number signals respectively defined by a specified Pulse Duration Distribution and a specified Pulse Spacing Distribution at said specified level;

said controller controlling said first arbitrary random number generator to selecting alternately one group or the other group of said two groups of first random number signals by said memory selection signal obtained in accordance with said specified Pulse Duration Distribution and said specified Pulse Spacing Distribution defined at said specified level to obtain selected signals; and

a D/A converter for converting the selected signals to pseudo continuous noise of analog value; said pseudo continuous noise being generated in accordance with said Amplitude Probability Distribution, and said specified Pulse Duration Distribution and said specified Pulse Spacing Distribution at said specified level[;].

[said controller controlling said first arbitrary random number generator by said selection signal to selecting one of said two groups of first random number signals in accordance with said specified Pulse Duration Distribution and said specified Pulse Spacing Distribution defined at said specified level.]

3. (Amended) A pseudo noise generator [according to claim 2, in which] comprising:

first terminal means receiving first clock pulses;

U.S. Patent Application of Yamane et al.

Serial No.: 09/604,896 - Art Unit: 2857

a controller for generating, in addition to a memory selection signal, second clock pulses counted down by one forth from said first clock pulses;

a first arbitrary random number generator for generating, under control with said first clock pulses and said memory selection signal, two groups of first random number signals respectively corresponding to pre-divided Amplitude Probability Distributions, which are obtained by pre-dividing a specified Amplitude Probability Distribution into two parts at a specified level;

a second arbitrary random number generator for generating, under control of said second clock pulses and said memory selection signal, two groups of second random number signals respectively defined by a specified Pulse Duration Distribution and a specified Pulse Spacing Distribution at said specified level;

said controller controlling said first arbitrary random number generator by said selection signal to selecting alternately one group or the other group of said two groups of first random number signals by said memory selection signal obtained in accordance with said specified Pulse Duration Distribution and said specified Pulse Spacing Distribution defined at said specified level to obtain selected signals;

a D/A converter for converting the selected signals to pseudo noise of analog value; said pseudo noise being generated in accordance with said Amplitude Probability Distribution, and said specified Pulse Duration Distribution and said specified Pulse Spacing Distribution at said specified level, and

said first arbitrary random number generator comprising eight stages connected successively in cascade, each of stages comprising a cascade connection of a bit generator and a latch circuits, said eight stages being controlled by said first clock pulses, said memory selection signal being applied to a first stage of said eight stages, said first random number signals being obtained from the last stage of said eight stages.

4. (Amended) A pseudo noise generator [according to claim 2, in which] comprising:

first terminal means receiving first clock pulses;

a controller for generating, in addition to a memory selection signal, second clock pulses counted down by one forth from said first clock pulses;

U.S. Patent Application of Yamane et al.

Serial No.: 09/604,896 - Art Unit: 2857

a first arbitrary random number generator for generating, under control with said first clock pulses and said memory selection signal, two groups of first random number signals respectively corresponding to pre-divided Amplitude Probability Distributions, which are obtained by pre-dividing a specified Amplitude Probability Distribution into two parts at a specified level;

a second arbitrary random number generator for generating, under control of said second clock pulses and said selection signal, two groups of second random number signals respectively defined by a specified Pulse Duration Distribution and a specified Pulse Spacing Distribution at said specified level;

said controller controlling said first arbitrary random number generator by said selection signal to selecting alternately one group or the other group of said two groups of first random number signals by said memory selection signal obtained in accordance with said specified Pulse Duration Distribution and said specified Pulse Spacing Distribution defined at said specified level to obtain selected signals;

a D/A converter for converting the selected signals to pseudo continuous noise of analog value; said pseudo continuous noise being generated in accordance with said Amplitude Probability Distribution, and said specified Pulse Duration Distribution and said specified Pulse Spacing Distribution at said specified level, and

said second arbitrary random number generator comprising eight stages connected successively in cascade, each of stages comprising a cascade connection of a bit generator and a latch circuits, said eight stages being controlled by said second clock pulses, said memory selection signal being applied to a first stage of said eight stages, said second random number signals being obtained from the last stage of said eight stages.

5. (Canceled in Preliminary Amendment)

6. (2x amended) A pseudo noise generator [according to claim 2, in which] comprising :  
first terminal means receiving first clock pulses;

U.S. Patent Application of Yamane et al.

Serial No.: 09/604,896 - Art Unit: 2857

a controller for generating, in addition to a memory selection signal, second clock pulses counted down by one forth from said first clock pulses;

a first arbitrary random number generator for generating, under control with said first clock pulses and said memory selection signal, two groups of first random number signals respectively corresponding to pre-divided Amplitude Probability Distributions, which are obtained by pre-dividing a specified Amplitude Probability Distribution into two parts at a specified level;

a second arbitrary random number generator for generating, under control of said second clock pulses and said memory selection signal, two groups of second random number signals respectively defined by a specified Pulse Duration Distribution and a specified Pulse Spacing Distribution at said specified level;

said controller controlling said first arbitrary random number generator by said selection signal to selecting alternately one group or the other group of said two groups of first random number signals by said memory selection signal obtained in accordance with said specified Pulse Duration Distribution and said specified Pulse Spacing Distribution defined at said specified level to obtain selected signals;

a D/A converter for converting the selected signals to pseudo continuous noise of analog value; said pseudo continuous noise being generated in accordance with said Amplitude Probability Distribution, and said specified Pulse Duration Distribution and said specified Pulse Spacing Distribution at said specified level, and

said controller comprising an I-T converter for converting said second arbitrary random numbers  $i$  to time length data  $T^*$ , a down counter counting said time length data  $T^*$  under control of said first clock pulses, a clock generator for generating said second clock pulses from the counting state of said down counter under control of said first clock pulses, and a signal generator for generating said selection signal from the counting state of said down counter under control of said first clock pulses.

7. (1x amended) A pseudo noise generator according to claim 3, [in which] wherein :

said bit generator comprises a uniform random number generator for generating uniform random numbers  $z$  controlled under said first clock pulses, a memory for storing data necessary to determine each

U.S. Patent Application of Yamane et al.

Serial No.: 09/604,896 - Art Unit: 2857

bit of said random number signals to be generated, and a comparator for generating the state "1" or the state "0" in accordance with comparison results I (where  $y < z$ ) and II (where  $y \geq z$ ), respectively.

8. (Amended) A pseudo noise generator according to claim 4, [in which] wherein :

    said bit generator comprises a uniform random number generator for generating uniform random numbers  $z$  controlled under said first clock pulses, a memory for storing data necessary to determine each bit of said random number signals to be generated, and a comparator for generating the state "1" or the state "0" in accordance with comparison results I (where  $y < z$ ) and II (where  $y \geq z$ ), respectively.

9. (deleted herein without prejudice)